

IFW

PTO/SB/21 (08-03)

Approved for use through 08/30/2003. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	10/699,974
	Filing Date	11/02/2003
	First Named Inventor	Isaiah O. Oladeji
	Art Unit	2827
	Examiner Name	
Total Number of Pages in This Submission	Attorney Docket Number	Jessen 12-4-6 (284)

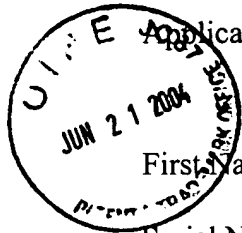
ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	1. Postcard
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Remarks	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Beusse Brownlee Wolter Mora & Maire, P.A.
Signature	James H. Beusse
Date	June 16, 2004

CERTIFICATE OF TRANSMISSION/MAILING	
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.	
Typed or printed name	Shirley Goff
Signature	Shirley Goff
Date	6/16/2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Application No. 10/699,974

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: **Isaiah O. Oladeji**

Group Art Unit: **2827**

Serial No. **10/699,974**

Examiner:

Filed: **11/02/2003**

For: **Mask Layer And Interconnect Structure  
For Dual Damascene Semiconductor Manufacturing**

**INFORMATION DISCLOSURE STATEMENT TRANSMITTAL**

- ☒ 1. Pursuant to 37 CFR 1.97(b)  
(within 3 months of filing or prior to 1st Office Action)
- ☐ 2. Certification Pursuant to 37 CFR 1.97(c)  
(before Final Office Action or Allowance)
- ☐ 3. Petition, Certification & Petition Fee Payment Pursuant to 37 CFR 1.97(d)  
(before issue fee payment)

Mail Stop Patent Application  
Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The following are submitted in the above-identified application in compliance with 37 CFR 1.97 & 1.98:

- ☒ 4. A list of documents on form PTO-1449 is enclosed herewith.

This paper is submitted in accordance with:

- ☒ 5. 37 CFR 1.97(b): [within 3 months of filing or prior to 1st Office Action]
- ☐ 6. 37 CFR 1.97(c): [before Final office Action or Allowance, whichever is earlier; and
- ☐ 7. The required certification made in item 10 below; or
- ☐ 8. The \$180.00 fee specified in 37 CFR §1.17(p) for submission of this Information Disclosure Statement.
- ☐ 9. 37 CFR §1.95(d): [before issue fee payment]; and

a) This is a petition for consideration of the subject Information Disclosure Statement. The petition fee (\$180.00) required by 37 CFR 1.17(i)(1) is authorized in item 14 below. (Direct this letter to: "Attention: PETITIONS EXAMINER" and, if applicable, include batch locator information: e.g., "Allowed Files, Batch \_\_\_\_, Date of Allowance \_\_\_\_"), and

b) The required Certification is stated in item 11 below.

☐ 10. Certification

☐ 11. Each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement;

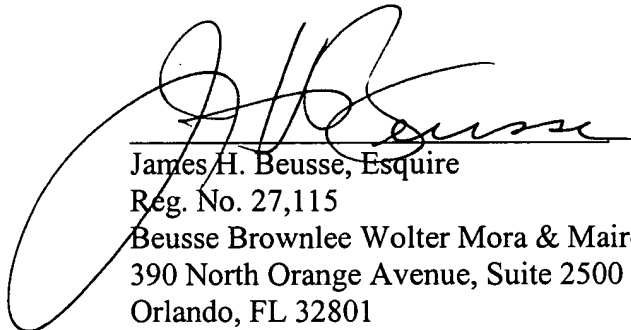
or

☐ 12. No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing this document after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.

☐ 13. Please charge all applicable fees associated with the submittal of this Information Disclosure Statement to Deposit Account No. \_\_\_\_\_.

An original and two (2) copies of this document are enclosed.

Respectfully submitted,



James H. Beusse, Esquire

Reg. No. 27,115

Beusse Brownlee Wolter Mora & Maire, P.A.

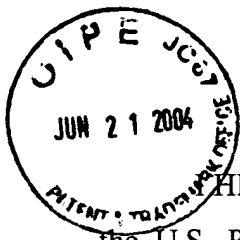
390 North Orange Avenue, Suite 2500

Orlando, FL 32801

Telephone: (407) 926-7701

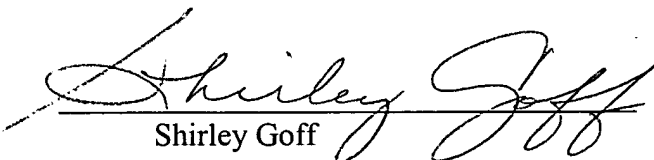
Facsimile: (407) 926-7720

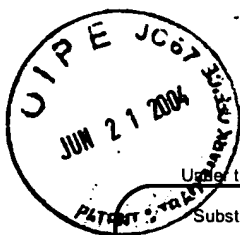
Email: [jbeusse@iplawfl.com](mailto:jbeusse@iplawfl.com)



CERTIFICATE OF MAILING

HEREBY CERTIFY that this Information Disclosure Statement is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Patent Application, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 16th day of June, 2004.

  
Shirley Goff



PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

**Complete if Known**

Application Number	10/699,974
Filing Date	11/02/2003
First Named Inventor	Isaiah O. Oladeji
Art Unit	2827
Examiner Name	
Attorney Docket Number	Jessen 12-4-6 (284)

Sheet 1 of 2

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	1	US- 2001/0004550	06/21/2001	Passemar	
	2	US- 2003/0100190	05/29/2003	Cote et al.	
	3	US- 5,635,423	06/03/1997	Huang et al.	
	4	US- 5,821,169	10/13/1998	Nguyen et al.	
	5	US- 6,087,250	07/11/2000	Hyakutake	
	6	US- 6,143,646	11/07/2000	Wetzel	
	7	US- 6,150,073	11/21/2000	Huang	
	8	US- 6,156,643	12/05/2000	Chan et al.	
	9	US- 6,221,759	04/24/2001	Bothra et al.	
	10	US- 6,225,217	05/01/2001	Usami et al.	
	11	US- 6,255,735	07/03/2001	Wang et al.	
	12	US- 6,312,874	11/06/2001	Chan et al.	
	13	US- 6,468,898	10/22/2002	Usami	
	14	US- 6,479,391	11.12.2992	Morrow et al.	
	15	US- 6,507,081	01/14/2003	Smith et al.	
		US-			
		US-			
		US-			
		US-			

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)				
	16	WO 01/99184 A2	12/27/2001	Infineon Technologies		
	17	WO 01/43171 A1	06/14/2001	Infineon Technologies		

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>		<b>Complete if Known</b>	
		Application Number	10/699,975
		Filing Date	11/02/2003
		First Named Inventor	Isaiah O. Oladeji
		Art Unit	2827
		Examiner Name	
Sheet 2	of 2	Attorney Docket Number	Jessen 12-4-6 (284)

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	18	S. WOLF and R.N. TAUBER, Silicon Processing for VLS/Era, Volume 1 - Process Technology, pp. 797-799, Second Edition (2000) Published by Lattice Press, Sunset Beach, CA	
	19	VINCENT ARNAL et al., A Novel SiO <sub>2</sub> -Air Gap Low K For Copper Dual Damascene Interconnect, Advanced Metalization Conference 2000, D. Edelstein et al., Warrendale, PA, USA, pp. 71-76	
	20	S. PURUSHOTHAMAN et al., Opportunities and Challenges in Ultra Low k Dielectrics for Interconnect Applications, IEEE, 2001, pp. IEDM 01-529-532	
	21	LYTLE et al., Overcoming Cu/CVD Low-k Integration Challenges in a High Performance Interconnect Technology, IEEE 2001, pp. IEDM 01-611-614.	
	22	ZIELINSKI et al., Damascene Integration of Copper and Ultra-Low-k Xerogel For High Performance Interconnects, 1997, pp. IEDM 97-936-938.	
	23	ARNAL et al., Integration of a 3 Level Cu-SiO <sub>2</sub> Air Gap Interconnect for Sub 0.1 micron CMOS Technologies, 2001 IEEE, pp. 298-300.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.